



City of Lynchburg  
Information Technology Strategic Plan  
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## **2 VISION FOR THE FUTURE**

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This strategic technology plan represents a common vision and strategy for moving the City of Lynchburg to the next level in its use of information technology. The theme of this strategic plan is to establish a set of common enterprise technology services, along with a common technology organization, focused on delivering technology that is effectively aligned to the City's core processes and services.

The vision for the future of the City of Lynchburg's technology environment includes:

- Common public safety systems powered by real-time GIS.
- City business processes re-engineered to reflect effective, efficient operations supported by strategic technology applications.
- Highly available, redundant platforms to support key applications such as GIS, computer aided dispatching, and enterprise resource planning.
- An enterprise administrative system with functionality appropriately aligned with a renewed set of business processes.
- A common database platform utilized to share information between "best of breed" applications.
- A comprehensive integration strategy and E-Government architecture providing the ability to link together disparate applications to present a common presence and sense of "My City of Lynchburg" to citizens.
- Consolidated technical staff focused around delivering a common vision for applications and technology.
- Key technology services that are highly available and effectively protected against catastrophic failure.
- Systems that are secure and appropriately protected.



### **3 INTRODUCTION**

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#### **3.1 PURPOSE OF THE PLAN**

Much like buildings and other physical infrastructure, technology is a critical asset for the City of Lynchburg requiring effective planning and strategy. As departments within the City continue to demonstrate the need for additional technology services to effectively support citizens of the community, it is critical that effective planning occur to ensure the necessary services can be provided as an enabler of governmental services to the community. As the requirements for technology change, technology itself is changing at a rapid pace. This requires constant monitoring of this change to ensure the City is appropriately aligned with industry best practices for the planning, implementation, and management of technology.

This document, the *City of Lynchburg Information Technology Strategic Plan*, serves as the City's blueprint for the implementation and management of technology. It is intended to establish a vision for the future, along with defining the specific actions that are necessary to realize the vision. In concert with these actions, overall accountability for the actions is also established to ensure City personnel are appropriately aligned with the strategy.

This plan was developed utilizing an industry standard strategic technology planning methodology that focuses on identification of business requirements, goals, and strategies, and then establishes a technology plan that will aid the City in meeting these goals with technology, technology services, and the appropriate organizational structure for applying technology. This plan is aligned with current industry trends and best practices to ensure the strategy chosen for the City is consistent with other successful local government organizations and private industry.

#### **3.2 CONTENTS OF THE PLAN**

This plan identifies several key best practices that helped shape the plan. In addition, the City has taken these industry best practices and developed specific guiding principles that are utilized to guide and shape the planning, implementation, and management of technology.

The ultimate purpose of this plan is to support the governmental business processes of the City. As such, the plan captures the key goals and driving forces related to the City's governmental business processes, as defined by the City's senior management. While not specifically stated in this plan, the overall strategic planning process captured departmental goals that will require technology support. These goals were a key factor in arriving at the strategies and actions defined in this plan.

Critical to the successful use of technology is an effective structure and governance model. This plan sets forth the processes and structure that will be utilized by the City to provide technology governance. This will ensure that an iterative process exists to continue to keep technology aligned with the needs of the departments within the City, and that the City has an effective structure for strategically managing technology.



The execution plan for moving technology forward is captured in this document in the form of strategies and actions as defined in Section 7 – Strategic Technology Initiatives. This section of the plan defines key areas known as Focus Areas that set forth the specific Statements of Direction that will be undertaken, as well as the Strategies and Actions that will be performed. In addition, this section also associates each action with key City personnel responsible for ensuring the action is completed.



## **4 STRATEGIC TECHNOLOGY PLANNING PROCESS**

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This section describes the process that was utilized for development of the City's technology strategy. In addition, this section also sets forth the scope of work that was performed.

### **4.1 PROCESS OVERVIEW**

The City of Lynchburg utilized a proven model for strategic technology planning. This is a multi-dimensional model focusing on key technology **Planning Disciplines** and defined **Phases**. The model breaks the strategic planning process into four phases of execution, with each providing significant building blocks utilized by subsequent phases. This approach ensured a successful final technology blueprint that represents the true needs of the organization. The following figure provides a visual representation of the Strategic Technology Planning Model that was utilized by the City in the development of the Information Technology Strategic Plan.



## Strategic Technology Planning Model







#### **4.2 STRATEGIC TECHNOLOGY PLANNING PHASES**

This section briefly describes the phases of the strategic planning process that were followed in the development of the strategic technology plan.

##### **Discovery**

The Discovery phase gathers information through departmental interviews, as well as assesses of the current technology environment. In order to effectively plan a future strategy and technology environment, it is important to first understand where the organization currently stands with respect to the use of technology. In addition, it is critical to understand, from a departmental perspective, what each department has defined as goals and needs related to technology. This is an attempt to fully understand the defined needs of the departments.

##### **S.W.O.T. Assessment**

The S.W.O.T. Assessment phase is utilized to identify **S**trengths, **W**eaknesses, and **O**pportunities for improvement, as well as **T**hreats to future success. This assessment utilizes the information gathered in the Discovery Phase and serves as one of the vehicles to bridge the gap between the current and the future environments and is the basis for developing the future strategies and actions.

##### **Strategy Recommendation**

The Strategy Recommendation phase utilizes the information obtained through the Discovery and S.W.O.T. processes to develop the future strategies and actions. This phase provides assurance that goals defined in the Discovery phase are addressed.

##### **Transition Planning**

The Transition Planning phase focuses on mapping the strategies and actions, along with accountabilities, into a transition plan. This phase results in a milestone-level plan that is then utilized by individual project managers to develop comprehensive project plans for execution of the overall strategy.



#### 4.3 SCOPE OF THE PROCESS

The scope of this strategic technology plan is centered on the following seven focus areas. These focus areas represent the organizational and technological components that are involved in providing a successful portfolio of services supporting the City's needs.

1. **Governmental Business Processes:** This focus area addresses strategies and actions necessary to understand business processes within the City as they relate to the use or application of technology. This area addresses the need to understand and align the related business processes for technology to support the key services the City provides to citizens.
2. **Governmental Systems:** This focus area addresses strategies and actions for key governmental systems that support the City's business processes. This area provides assurances that systems supporting the key business processes are effectively aligned to support these processes into the future.
3. **Technology Policies and Procedures:** This focus area addresses strategies and actions related to policies and procedures utilized to plan, implement, and manage information technology within the City. Technology policies and procedures provide the framework, guidance, and overall governance needed to ensure technology is implemented in a strategic manner through a controlled, managed effort.
4. **Technology Organization:** This focus area addresses strategies and actions related to the organizational structure utilized to plan, implement, and support technology within the City. An effectively structured technology organization will play a key role in the success of information technology services.
5. **Network Architecture:** This focus area addresses strategies and actions related to the network infrastructure utilized to support the key governmental systems and processes within the City. This area relates to network services, physical server infrastructure, and other supporting technologies such as proactive monitoring services.
6. **Application and Data Architecture:** This focus area addresses strategies and actions related to the architecture of the key applications and information utilized by the City. The scope of this focus area includes the general technology and structure of the applications and the methods utilized to develop applications, along with the methods utilized to integrate one system to another. The scope of this focus area also addresses the information utilized by these systems in terms of overall structure, storage, and retrieval.
7. **Security Architecture:** This focus area addresses strategies and actions related to the technology utilized to support information security within the City. Like many organizations, the City of Lynchburg has a need and responsibility to protect information utilized to run key systems. The City's security architecture represents a portfolio of services and technology utilized to protect the City's infrastructure and information assets from unauthorized access.



#### 4.4 **TANGIBLE BENEFITS OF THE PROCESS**

The following are anticipated benefits that are expected to be realized by the City of Lynchburg as a result of the strategic planning process.

##### ***Reduced Technology Risk***

- Ability to obtain external resources at a reasonable cost through coordinated vendor management
- Prevention of technology obsolescence, avoiding high technology risk
- Protection and security of data

##### ***More Efficient Information Technology Operation***

- Lower software development, support, and maintenance costs
- Ability to address enterprise-wide technology operations issues
- Systems that work together better and are easier to manage

##### ***Better Return on Investment and Reduced Risk for Future Investment***

- Reduced information technology infrastructure complexity
- Assurance that future investments are the “right fit” within the technology infrastructure

##### ***Faster, Simpler and Cheaper Procurement***

- Clearly defined standards
- Simplified buying decisions

##### ***Flexibility for Growth and Restructuring***

- Easier access to information across the enterprise
- Well-defined and identifiable business processes, making the technology aspects of revising a business process easier

##### ***Faster Time to Market***

- Enhancements to technology that are less costly and less complex



## 5 TECHNOLOGY VISION

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### 5.1 CITY COUNCIL VISION

The process of strategic planning for technology begins with having a good understanding of the overall organizational goals. The basis for these goals for the City begins with City Council. The vision statement and description of desired outcomes that were adopted by City Council in January, 2001 help form the foundation for this technology plan:

*"Lynchburg 2020: Working together, we will be a progressive community shaped by new ideas and solutions, a skilled and innovative workforce, and citizen leadership – all distinguished by responsible and traditional values, involvement, education, new technology, and quality citizen services."*

*As a City government, we will be on the cutting edge of change, providing a clear vision and the driving force to produce:*

- *Stable, productive, inspired families*
- *Dynamic economic development center*
- *A superior education community*
- *A community environment second to none*
- *Responsive, effective local government."*

### 5.2 CITY-WIDE GOALS AND STRATEGY

City administration has taken the vision set forth by City Council and created a set of comprehensive goals and focus areas entitled "Results Oriented Government." This Information Technology Strategic Plan establishes a set of technology-specific focus areas that are aligned to the overall City-wide "Results Oriented Government" focus areas. Most of the technology strategies and actions are aligned to the Results Oriented Government's "Workforce Development and Process Improvement" focus area.

### 5.3 TECHNOLOGY TRENDS AND INDUSTRY BEST PRACTICES

Leveraging the knowledge and experiences of others is an effective way of reducing overall technology risk. This section of the plan identifies the industry trends and best practices which support the strategies and actions identified in Section 7 – Strategic Technology Initiatives. The sources of the trends and industry best practices include sources with many years of experience in overall strategic technology planning, management, and implementation, including Virtual IT, the Gartner Group, and the Meta Group.

Identified industry trends and best practices are as follows:

1. **Unified Technology Planning and Management.** Overall planning and management of technology that benefit many areas of an organization should be centralized to ensure efficiency of operations, lower total cost of ownership, and security of information.



2. **Reduced Integration Complexity.** A heterogeneous environment consisting of many different platforms and technologies will continue to present a significant challenge, especially to organizations that cannot dedicate a significant amount of staff to support this type of environment. By reducing integration complexity and the number of applications performing similar functions, organizations will create more efficient information technology operations that can better support their business partners.
3. **Minimized Vendors, Platforms, Services and Configurations.** Individual department preferences should be respected within an established framework. However, every effort should be made to ensure product and vendor selection diversity do not create manageability issues and challenges.
4. **Standardized Technology Services Across the Enterprise.** An effective IT organization provides enterprise services such as e-mail, security, web hosting, application hosting, data storage and retrieval, backup, and recovery to all facets of the organization. These types of enterprise services should be leveraged by all departments and applications as a network of cooperating services, moving away from the classic "stovepipe" environments that duplicate such services for their own use.
5. **Open Systems Architecture.** Systems that utilize an open product, market, and industry standards will maximize flexibility and minimize total cost, when compared to proprietary, closed systems. However, open standards do not exist for all parts of the architecture. A combination of de facto industry standards, product standards, and open standards will be required in order to support a diverse operating environment.
6. **Modular System Implementation Model.** By separating business applications, security providers, database environments, and other infrastructure services, organizations will be better positioned to facilitate needed technology change without having to employ the "forklift approach" to technology change. Following this principle will ultimately allow organizations to prevent technology obsolescence by providing the ability to change components in the environment without having to change the entire environment.
7. **Business-Specific Read-Only Databases (Data Marts).** Organizations that will rely heavily on packaged software should implement a data mart environment that provides user access to information stored in a packaged systems transactional databases. This provides the organization with the ability to lessen the impact in the event the packaged system needs to be replaced at some point in the future. By using data marts for exchanging information, other systems and users are not impacted directly by a change in a packaged system. In addition, a data mart environment will provide an organization with the ability to integrate information from several disparate packaged systems into an enterprise-wide view, providing significant value to the user needing to view information across multiple business boundaries.
8. **Centralized IT Organizational Structures.** Effective Information Technology organizational structures span three distinct models: centralized, decentralized and Hybrid. Of these, centralized is the most prevalent in the industry, being used 71% of the time. (People3 a Gartner Company 2003)



- 9. Customer Driven Service Delivery Strategy.** Centralized Information Technology organizations should consider adopting a customer driven services delivery strategy. This strategy includes clearly defined services and service delivery levels that are explained in terms and language that reflect what the customers want to buy and use. This approach requires the Information Technology personnel to have the competencies and resources necessary to meet customer service expectations. (Gartner Group 2003)
- 10. Business Leadership Role of Chief Information Officer (CIO).** Technology has become an equal partner in business decision making. The demands for technology have changed, as have the roles of the information technology organization and the CIO. The information technology organization is evolving from a group of technology experts to a high-tech staff that is led by a CIO who is included at the enterprise strategy table as an equal and valued partner. (Gartner Group 2003)
- 11. Unified Architecture Planning and Management.** The planning and management of an enterprise technical architecture is unified, even if application systems are implemented on a local departmental basis. This unified architecture planning function is housed within an enterprise architecture group.
- 12. Service-Based Technology Organization.** It is important for a technology organization's roles to be well-understood by other departments and for the organization to be structured around the technology services they provide. For this reason, an information technology organization should group its personnel and delivery methodology around the following core services:

  - Application Services
  - Data Services
  - Infrastructure Services
  - Customer Service
  - Technical Planning and Process Management
  - Education and Training
  - General Administration.



#### **5.4 GUIDING PRINCIPLES FOR CITY'S INFORMATION TECHNOLOGY INVESTMENT**

Shared principles across all City organizations are a necessity for the most effective use of the City's technology resources. Nine (9) fundamental principles are defined to guide the City's information technology initiatives and investment. These principles closely follow industry best practices and trends.

- 1. Every technology initiative will have a defined business need and customer sponsor.**
  - All technology initiatives will be driven by business requirements and prioritized according to the business need.
  - Business justifications will determine the technology priorities for the Information Technology Department (IT).
- 2. Technology will be shared across departments and applied to common work processes wherever possible.**
  - Technology initiatives will have an enterprise-wide focus when being evaluated, looking for shared applications to reduce redundancy and the inefficient use of resources.
- 3. Every technology initiative will be evaluated for its full requirements and costs, covering the full life cycle of the initiative, before a solution is developed and implemented.**
  - The full cost of an initiative, including the requirements for implementation, operations, maintenance, and support will be included when being evaluated.
- 4. Common data will be used across departments and shared to the fullest extent possible.**
  - Data will be viewed as an enterprise resource.
  - Data will be captured once and shared wherever needed to reduce costs, redundancy, and duplication of effort.
- 5. Custom application development will be minimized. "Buy" will be the preference versus "build."**
  - Commercial off-the-shelf software, with minimal customization, will be acquired and installed to speed the implementation of new business applications and to minimize application development resource requirements.
  - Business processes will be examined and improvements identified prior to acquiring new applications to obtain the desired functionality with minimal customization.



**6. Proven advanced technologies will be pursued.**

- Technologies that are implemented will reflect emerging trends that meet business requirements, but will also have a proven track record for quality and support.

**7. Proprietary technology solutions will be minimized. Open architectures and standards will be followed.**

- Technology solutions will adhere to open standards to facilitate data sharing and system integration, to minimize support costs, and to maintain maximum vendor independence.

**8. Technology initiatives will adhere to city-wide technology standards.**

- All information technology development and operations will conform to a defined set of standards.
- Standards will be maintained to minimize costs and to ensure systems interoperability.

**9. Technology projects will be managed using a standard project management methodology.**

- All projects will have a predefined scope, with milestones and deliverables defined.
- When vendors or contractors are utilized, contract management will be assigned and managed to ensure deliverables are produced within the agreed scope and schedule of the project.
- All new technology initiatives and investments will be evaluated and managed in accordance with these principles.





## **6 INFORMATION TECHNOLOGY ORGANIZATION AND GOVERNANCE**

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This section of the strategic plan focuses on the management and service delivery processes of the organization tasked with technology strategy development, implementation, and management, along with the processes utilized for governance of technology projects within the City.

### **6.1 INFORMATION TECHNOLOGY DEPARTMENT PURPOSE**

The Information Technology Department is responsible for providing enterprise technology services to the City's departments. The department operates in a consultative and collaborative manner, partnering with its customers to understand their business needs and aid in aligning technical solutions to meet defined business needs and goals. The following defines the mission, vision, and values that serve as the cornerstone for the Information Technology Department:

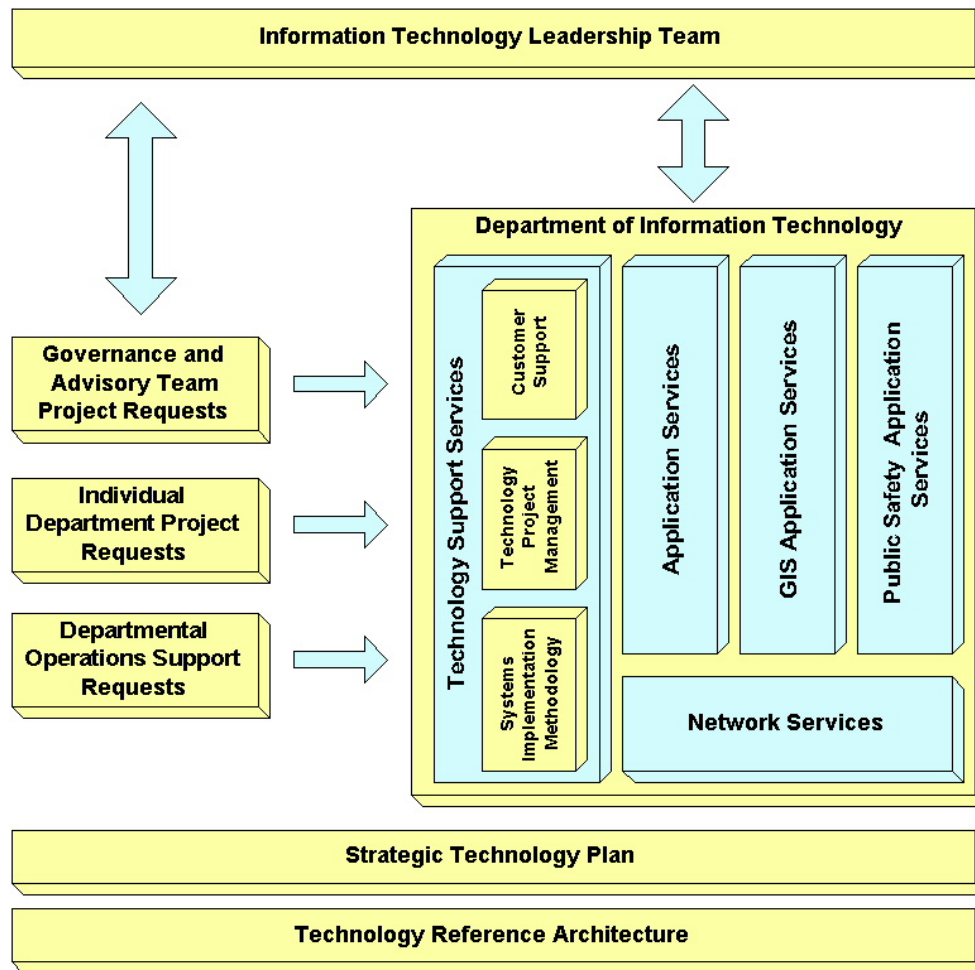
**Mission Statement:** *To partner in our customers' success through the provision of high quality information technology solutions and services.*

**Vision Statement:** *An organization providing high quality and progressive information technology solutions and services which are responsive and effective in meeting the needs of local government, distinguished by collaboration, teamwork, customer care, and enhanced skills development.*

**Values:** *Honesty, Integrity, Trust, Empathy, Ethics, Dedication to Service*

### **6.2 TECHNOLOGY SERVICES DELIVERY MODEL**

Based on industry best practices, IT Department should be structured as a service-based organization focused around delivery of a core set of enterprise services. The diagram on the following page provides a conceptual model representing a refined vision for the delivery of technology services within the City.



### *Technology Services Delivery Model*

This technology services delivery model places emphasis on the fact that the departments within the City should be driving the justification of technology projects to meet business goals and needs. To support this, the technology governance and advisory teams have overall responsibility for reviewing business cases and then prioritizing technology projects to meet the needs as defined.

While several of these teams exist today, this model proposes reconstituting some, as well as creating others. The teams will be comprised primarily of representatives from City departments, with participation from the Information Technology Department. The Information Technology Leadership Team (ITLT) will play a key role moving forward. All new technology projects meeting the criteria defined in the City's Information Technology Project Governance policy will be reviewed and approved by the ITLT, working in concert with either the appropriate advisory team or the individual department submitting the project request.

The ITLT will rely upon IT for support on technical project review. Individual departments that have technology project needs that do not meet the criteria of the Technology Project Governance policy will submit and prioritize project requests individually with IT. The City's Information Technology Strategic Plan, along with



the Technology Reference Architecture, will be utilized to ensure all projects are aligned with the City's stated strategy.

As projects are approved and funded, the IT Technology Support Services division will be responsible for centralized technology project initiation and tracking functions, providing a single location for tracking planned and active technology projects. This division will be responsible for working with the respective advisory team or individual department to develop a comprehensive understanding of project needs and will work closely with the necessary IT division to establish a plan for meeting the needs as defined.

In addition to new project support, the Technology Support Services division will be responsible for customer technology support services for the City. This division will host the centralized support function that is responsible for fielding all technical support and help desk calls. The support service will include first tier help desk support, as well as have the role of dispatching the problem to the necessary area for second tier support.

Overall delivery of technology services within the City will be guided by the Information Technology Strategic Plan, along with the Technology Reference Architecture. These two documents represent the blueprint for applying technology to meet City departments' needs. Together, these living frameworks supply the strategic map moving forward into the future.

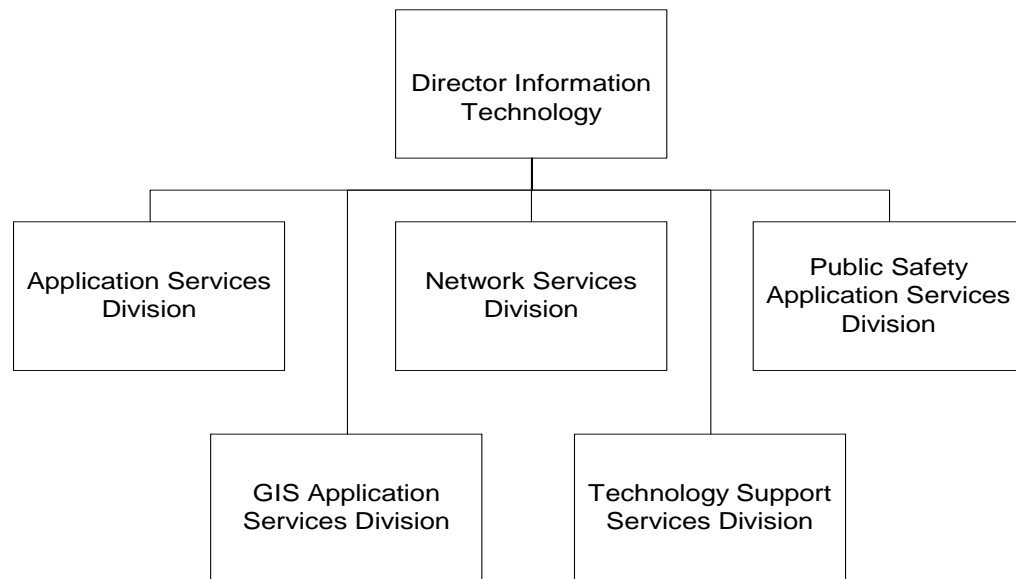
### **6.3 TECHNOLOGY ORGANIZATION**

This section of the strategic plan defines the Information Technology Department organizational structure that will be utilized for technology service delivery. Key to implementing an effective technology organization is having a good understanding of how the organization is aligned with the key business functions of the City.

#### **6.3.1 ORGANIZATIONAL STRUCTURE FOR TECHNOLOGY SERVICE DELIVERY**

The organizational structure to be utilized by IT supports the technology services delivery model as defined in Section 6.2 and is focused on providing a comprehensive set of enterprise technology services.

The following diagram provides a visualization of the structure of IT for the future, along with more detailed descriptions of the service divisions that have been defined.



### *Information Technology Department Organizational Structure*

#### **6.3.1.1 APPLICATION SERVICES DIVISION**

This Application Services Division is responsible for the planning, implementation, and management of the City's general government application portfolio. This portfolio is focused around the key governmental systems that support functions including financial, human resources, tax assessment, billing and revenue, as well as other key department-specific functions. In this role, the division works closely with the ITLT and various advisory teams in planning, analysis, and ultimate implementation and management of applications.

This division is also responsible for the management of the City's key computer processing platform, which is an IBM OS/400 platform. Responsibilities include overall operations, hardware, and software support of this platform.

#### **6.3.1.2 GEOGRAPHIC INFORMATION SYSTEM (GIS) DIVISION**

GIS is currently housed in the Public Works Department and would become part of the IT department of the future. The GIS Division is responsible for the planning, implementation, and management of the City's Geographic Information System (GIS). The GIS Manager will lead the division as well as serving as the City's leader and advocate for implementation and use of GIS technology within the City. This division will be responsible for leading the Geographic Information System Advisory Team (GISAT) that assists with the City's strategic GIS effort. The GIS Division will also be responsible for working with departments that need GIS functionality, aiding them in understanding how the technology can be leveraged to meet their needs. The division will also have responsibility for integrating the City's GIS functionality into other applications that require mapping or geo-based functions.



#### **6.3.1.3 NETWORK SERVICES DIVISION**

The Network Services Division provides the engineering and operational support of the City's networks and associated network services for all City departments. The scope of this division includes the City's local area network, the wide area network interconnecting City locations, and the City's connections to the public Internet, as well as interconnectivity to the City School's network environment.

The scope of services provided by this group includes the following services.

- Server and associated operating system support
- E-mail services
- Network and server monitoring and management
- Network and server security monitoring and management
- Desktop management and support
- Network engineering, including design and implementation.

#### **6.3.1.4 PUBLIC SAFETY APPLICATION SERVICES DIVISION**

This is a newly created division responsible for the planning, implementation, and management of technology utilized to support public safety applications within the City of Lynchburg. The Public Safety Application Services Division is established to support a consolidated effort focused around providing a set of comprehensive, highly available application services to support public safety operations. This division will be appropriately aligned with the needs and demands of public safety to ensure both applications and personnel are available in the manner necessary to support these key services.

This division will work closely with the Public Safety Advisory Team (PSAT). The PSAT will be responsible for defining an overall strategic vision for public safety technology and its application.

#### **6.3.1.5 TECHNOLOGY SUPPORT SERVICES DIVISION**

The Technology Support Services (TSS) Division is a newly created division responsible for providing a customer relationship management role between customer departments and IT, as well as provide overall process guidance and support for the development of applications. This division will work with other divisions in IT to establish repeatable processes for implementing systems and technology. TSS will also be responsible for providing quality customer support functions to departments within the City.

The TSS Division will be responsible for centralized management of the City's technology project portfolio. In this role, the division will work with IT, the advisory teams, and departments to provide consolidated project tracking for all active technology projects within the City. A key role of the division will be to work with the project managers to establish a consistent method of initiating and managing technology projects across the City.



#### **6.4 INFORMATION TECHNOLOGY GOVERNANCE AND ADVISORY TEAMS**

Several teams are needed to assist in the management of the delivery and enhancement of information technology services to the City as described below:

**Information Technology Leadership Team (ITLT):** The ITLT will guide the direction and priorities for the investment in, and use of information technology across the City. The ITLT will be composed of six members or designates of the City Manager's Leadership Team and one Constitutional officer, as well as the Director and Division Managers in the Information Technology Department. This team will approve the technology standards utilized across all departments. The team will be chaired by the Director of Information Technology.

**Public Safety Advisory Team (PSAT):** The PSAT will serve as a leadership team for advancing and guiding the use of information technology related to public safety departments in the City. Responsibilities of this team include reviewing and prioritizing new project requests, monitoring active projects, and aiding in resolving specific project issues. The PSAT is to be composed of the department heads, or their designates, from the Fire Department, Police Department, Emergency Communications, Commonwealth's Attorney office, and IT, the Manager of Network Services, the Manager of Public Safety Application Services, and the Manager of Technology Support Services in IT. This team is chaired by the Manager of Public Safety Application Services.

**Web Steering Team:** The Web Steering team will be responsible for setting the direction for the use of Internet technologies across the City government, including prioritizing potential applications on the City's Internet and Intranet sites. The team is to be composed of designates from across the City, as determined by the City Manager's Office and department heads, the Director of Information Technology, and the Manager of Application Services. This team will also recommend the technology standards to be utilized across all departments for Internet and Intranet development, for ultimate approval by the ITLT. This team is to be chaired by the Director of Information Technology.

**Geographic Information System Advisory Team (GISAT):** The GSAT will serve as a leadership team for the management, operation, and enhancement of the City's GIS. Customer satisfaction and the prioritization of enhancements of GIS are the major focal points for the team. The GISAT is to be composed of representatives from the major stakeholder organizations across the City and the Manager of GIS in the Information Technology Department. This team is to be chaired by the Manager of GIS.

**New World Systems Advisory Team (NWSAT):** The NWSAT will serve as a leadership team for the overall performance of one of the City's major enterprise software systems, New World Systems. Customer satisfaction and the prioritization of enhancements to New World Systems applications are the major focal points of this team. The NWSAT is to be composed of the departmental "business owners", or their representatives, of the New World Systems applications and the Manager of Application Services in the Information Technology Department. This team is to be chaired by the Manager of Application Services.

**Community Development Advisory Team (CDAT):** The CDAT will serve as a leadership team for the overall performance of the City's integrated system, TrakIT,



which supports the community planning, building permitting and inspections, code enforcement, and business licensing processes. Customer satisfaction and the prioritization of enhancements to TrakIT applications are the major focal points of this team. The CDAT will be composed of the departmental "business owners", or their representatives, of the TrakIT applications and the Manager of Application Services in the Information Technology Department. This team is to be chaired by the Manager of Application Services.

**Local Area Network Administrators Team (LANAT):** The LANAT will provide leadership for the direction of desktop and enterprise standards. This team develops processes, procedures, and standards for use by all City departments to ensure that networks operate efficiently, effectively and reliably. The LANAT is composed of representatives from the Information Technology Department as well as other City departments, Schools, and Constitutional offices. This team is to be chaired by the Manager of Network Services in the Information Technology Department.



## **7 STRATEGIC TECHNOLOGY INITIATIVES**

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This section of the strategic plan sets forth the key strategic initiatives that were defined as part of the strategic planning process. During the Discovery phase, fourteen departments were interviewed. Information was also collected from other departments in the form of technology assessment questionnaires. This information included the identification of key business goals and strategies for these departments, as well as goals specifically related to technology services. Through this work, seven focus areas were identified, with strategies and actions defined within each area.

### **7.1 STRATEGIC TECHNOLOGY FOCUS AREAS**

The seven focus areas, each with an owner responsible for overseeing implementation, contain strategic technology initiatives, described as "Statements of Direction." Each statement of direction is based upon a specific problem or opportunity statement and includes a set of strategies and actions, with time frames and accountable leaders identified. A summary of the key focus areas that were identified is as follows:

- 1. Governmental Business Processes:** The focus area sets forth initiatives that are centered on key business processes and links closely to the related key business systems that support these processes.
- 2. Governmental Systems:** This focus area addresses problems and opportunities related to the technology systems that support the City's governmental business processes.
- 3. Technology Policies and Procedures:** This focus area addresses problems and opportunities related to policies and procedures necessary to effectively plan, implement, and support technology.
- 4. Technology Organization:** This area focuses on the problems and opportunities that were identified related to the City's organizational structure for the support of technology.
- 5. Network Architecture:** This focus area addresses the overall technology infrastructure of the City from a physical standpoint. This includes items such as the servers, networks, and related services identified as core services necessary for supporting technology in the City.
- 6. Application and Data Architecture:** This focus area addresses the architecture of applications utilized to support key business processes and systems, as well as the methods utilized to perform integration between these systems. In addition, this focus area also encompasses the information and data model utilized by the key business systems.
- 7. Security Architecture:** This focus area addresses problems and opportunities that could have a material impact on the City's information security into the future.





The following are the leaders of the Focus Area:

<u>Focus Area</u>	<u>Leader</u>
✚ Governmental Business Processes	City Manager's Office: Deputy City Manager
✚ Governmental Systems	IT: Manager of Application Services
✚ Technology Policies and Procedures	IT: Director
✚ Technology Organization	IT: Director
✚ Network Architecture	IT: Manager of Network Services
✚ Application Architecture and Data	IT: Manager of Application Services
✚ Security Architecture	IT: Manager of Network Services

## **7.2 DETAILED STRATEGIES AND STATEMENTS OF DIRECTION**

The time frames for the Strategies and Actions outlined in each focus area generally equate to:

Short Term = within 12 months  
Intermediate Term = within 1 – 2 years  
Long Term = more than 2 years.

### **FOCUS AREA 1: GOVERNMENTAL BUSINESS PROCESSES**

This focus area addresses strategies for business processes within the City as they relate to the use of technology. Technology is put in place to support the key processes performed to serve citizens. As such, it is important that the technology effectively meet the needs of the government business processes. It is also recognized that for technology to effectively and efficiently support the City, the related business processes must be well understood and the technology aligned to meet the defined needs of departments and citizens.



**Focus Area Leader:** City Manager's Office – Bonnie Svrcek

1.1      GENERAL GOVERNMENT BUSINESS PROCESSES			
Statement of Direction: Define core City business processes and ensure that appropriate technology is being utilized to support them.			
STRATEGIC TECHNOLOGY FOCUS AREA:		Governmental Business Processes	
RELATED CITY FOCUS AREA:		Workforce Development and Process Improvement	
PROBLEM/OPPORTUNITY STATEMENT:		The City currently does not have a documented understanding of business processes, especially between departments, or how existing technology could best be utilized to support these business processes.	
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Establish role reporting to City Manager's Office that is responsible for governmental business process analysis and strategy.		Short term	Deputy City Manager
2. Identify the specific process and methodology that will be utilized for identification, documentation, and analysis of business processes.		Short term	TBD
3. Identify the key governmental business processes and departmental functions.		Intermediate term	TBD
4. Develop a phased plan for defining a business process model for each key business process. Inter-departmental processes spanning multiple departments will get primary focus.		Intermediate term	TBD
5. Using the identified methodology, develop the current business process model for each business process.		Intermediate term	TBD
6. Associate currently installed systems to the business processes they support.		Intermediate term	Application Services Manager
7. Perform analysis to identify opportunities to realign processes or to apply technology to improve the processes. Develop a modified process model defining the future state for each business process.		Long term	Application Services Manager



1.2 PUBLIC SAFETY BUSINESS PROCESSES AND SERVICES		
<b>Statement of Direction:</b> Identify public safety processes, as a subset of overall governmental business processes, and ensure appropriate technology is being utilized to support them.		
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Governmental Business Processes</i>	
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>	
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	The City currently has a disparate public safety technology environment supporting multiple departments, resulting in the inefficient use of technology resources and barriers that prevent integrated systems and information sharing.	
STRATEGIES AND ACTIONS:	TIMEFRAME	ACCOUNTABILITY
1. Complete the identification of key business processes and departmental functions related to public safety.	Intermediate term	TBD
2. Develop a phased plan for defining a business process model for each business process in public safety. Inter-departmental processes will get primary focus.	Intermediate term	TBD
3. Develop the current business process model for each public safety business process.	Intermediate term	TBD
4. Associate currently installed systems to the business processes they support.	Intermediate term	Public Safety Application Services Manager
5. Perform analysis to identify opportunities to realign processes or to apply technology to improve the processes. Develop a modified process model defining the future state for each business process.	Long term	Public Safety Application Services Manager



## **FOCUS AREA 2: GOVERNMENTAL SYSTEMS**

This focus area addresses strategies for key governmental systems that support the City's business processes. This focus area is centered on ensuring the systems supporting the key business processes are effectively aligned to support these processes into the future.

**Focus Area Leader:** Information Technology – Gary Cowden

<b>2.1 GENERAL GOVERNMENT SYSTEMS</b>			
<b>Statement of Direction:</b> Deploy enterprise information technology solutions to address common business processes for use by all departments, eliminating system and data duplication.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Governmental Systems</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Currently, the City has multiple systems and redundant data supporting common business processes.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. For each future process model developed in Focus Area 1.1.7, develop a comprehensive integrated system strategy.		Long term	Application Services Manager
2. Initiate specific projects to implement the integrated system strategies.		Long term	Application Services Manager
Based on work performed during the strategic planning process Discovery Phase, the following potential projects were identified. The priority and order in which these projects are executed will be determined by the priorities set in Focus Area 1.1.4.			
a. <i>Premise Information and System Integration.</i> Establish an integrated system where building characteristic information is initiated and then made available. (current systems include: TrakIT, CAMA, GIS).			
b. <i>Property and Address Information and Systems Integration.</i> Establish an integrated system where property information, as well as address information related to the property, is maintained through a centralized			



<p>mechanism and then made available for other systems or departments needing access to this type of information.</p> <p>c. <i>Financial Information and Systems Integration.</i> Establish an integrated system that can service departments that currently have independent financial systems, including Public Works, Police, Parks and Recreation, and Human Services.</p> <p>d. <i>Financial Accounts Receivable Enhancement.</i> Implement miscellaneous accounts receivable functionality in New World Systems, and expand accounts receivable to support delinquent billing and collections.</p> <p>e. <i>Centralized Accounts Payable Implementation.</i> Implement centralized accounts payable functionality within New World Systems to eliminate the need for departmental processes to manage accounts payable. This would also focus on integration with existing purchasing, receipt of goods, and fixed asset processes.</p> <p>f. <i>Electronic Document Management and Enhanced Imaging.</i> Leverage the installed electronic document management system to support departmental needs for document management and to integrate with current systems.</p> <p>g. <i>Personnel Information and Systems Integration.</i> Establish an integrated system that can service departments that currently have independent personnel systems, including Public Works, Police, Parks and Recreation, and Human Services.</p>		
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2.2 PUBLIC SAFETY SYSTEMS			
<b>Statement of Direction:</b> For those processes unique to public safety, deploy information technology solutions to address common business processes for use by all public safety departments, eliminating system and data duplication.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>		Governmental Systems	
<b>RELATED CITY FOCUS AREA:</b>		Workforce Development and Process Improvement	
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>		Currently, the City's public safety departments have multiple systems and redundant data supporting common business processes.	
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. For each future state process model developed in Focus Area 1.2.5, develop a comprehensive integrated system strategy.		Long term	Public Safety Application Services Manager
2. Initiate specific projects to implement the integrated system strategies.		Long term	Public Safety Application Services Manager
<p>Based on work performed during the strategic planning process Discovery Phase, the following potential projects were identified. The priority and order in which these projects are executed will be determined by the priorities set in Focus Area 1.2.2</p> <p>a. <i>Integration of Building Premise Related Systems and Information.</i> Integrate building characteristic database from Focus Area 2.1.2.a to support Fire inspections, as well as Fire and Police incident response.</p> <p>b. <i>Property and Address Integration and Consolidation.</i> Integrate property and address database from Focus Area 2.1.2.b to support key public safety systems, including Visual Computer Aided Dispatch, Crime View, Fire View, Visual Fire Info and Pistol 2000.</p> <p>c. <i>Emergency Response Incident Information Integration.</i> Establish an integrated information repository, with effective user and information security, for all incident response information,</p>			



providing the ability to link response data together across Fire, Police, and EMS systems for the purposes of incident analysis and reporting.		
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### 2.3 GEOGRAPHIC INFORMATION SYSTEM (GIS)

**Statement of Direction:** Deploy one strategic Geographic Information System to provide GIS services and resources to all City departments.

<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Governmental Business Processes</i>
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	The City currently does not have a well-defined strategy for the use of GIS across departments, nor does the City have a committed effort to support and utilize GIS as a strategic tool.

STRATEGIES AND ACTIONS:	TIMEFRAME	ACCOUNTABILITY
1. Charter the GIS division with a clearly defined role and mission for being a service organization to all departments, driving the integrated use of GIS.	Short term	City Manager
2. Designate the GIS division manager to function as strategic GIS advocate for the City and to chair the GIS Advisory Team, as defined in Focus Area 3.3.	Short term	City Manager
3. Realign the GIS division to report to the IT department, as defined in Focus Area 4.5.	Short term	City Manager
4. Educate key departments on GIS capabilities and value.	Short term	GIS Manager
5. Elicit GIS requirements from key departments and define departmental goals for the use of GIS technology.	Intermediate term	GIS Manager
6. Work with key departments to develop a strategic GIS plan for the City that clearly defines goals, strategies and actions to meet the departments' goals.	Intermediate term	GIS Manager



2.4 E-GOVERNMENT SERVICES			
<b>Statement of Direction:</b> Develop an E-Government strategy for the City, incorporating identified departmental E-Government goals and the City-wide business process model.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Governmental Systems</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Many departments have stated E-Government goals and the City does not have a coordinated plan for developing and implementing the desired functionality on the Internet.		
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Develop a prioritized list of departmental E-Government goals and application requirements, including: <ul style="list-style-type: none"> <li>a. Employee self-service to allow employee-initiated benefit information changes.</li> <li>b. RecWare system upgrade for Parks &amp; Recreation to enable Internet access to registration .</li> <li>c. Building permit and inspection information available on web, as well as scheduling of inspections.</li> <li>d. Building plan submittal and application for building permits.</li> <li>e. Business license renewal and application.</li> <li>f. On-line registration for decals and personal property changes.</li> <li>g. Web bill presentation, including water, personal property, real estate, common good, elevator, business license, and miscellaneous bills.</li> <li>h. Web bill payment.</li> </ul>		Short term	Web Steering Team
2. Document roles and responsibilities for supporting the City's Internet and Intranet sites.		Short term	Web Steering Team
3. Develop a technical architecture to support E-Government service delivery, leveraging the systems integration architecture developed in Focus Area 6.4.		Intermediate term	Application Services Manager





### **FOCUS AREA 3: TECHNOLOGY POLICIES AND PROCEDURES**

This focus area addresses strategies related to policies and procedures utilized to plan, implement, and manage information technology within the City. Technology policies and procedures provide the framework, guidance, and overall governance needed to ensure technology is implemented in a strategic manner through a controlled, managed effort.

**Focus Area Leader:** Information Technology – Mike Goetz

<b>3.1 SYSTEMS DEVELOPMENT METHODOLOGY AND PROCESS</b>			
<b>Statement of Direction:</b> Implement a standardized, repeatable process for implementing technology solutions across the City.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Policies and Procedures</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Information Technology, as well as other departments responsible for implementing technology, does not utilize a formal methodology and process for planning and implementing technology projects. Lack of such a process results in situations where the City is not able to gain efficiency through technology implementation. In addition, lack of a formal process for identifying risk and clearly identifying project requirements will likely result in lengthy project implementations that may or may not result in the desired outcome.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Evaluate systems development methodologies, including one identified in the strategic planning process.		Short term	Technology Support Services Manager
2. Select and customize methodology as necessary.		Short term	Technology Support Services Manager
3. Select proof-of-concept project and utilize the defined methodology through the full life-cycle of the project, making adjustments to the process as necessary.		Intermediate term	All IT Division Managers



3.2 CENTRALIZED TECHNOLOGY PROJECT INITIATION AND TRACKING			
<b>Statement of Direction:</b> Establish a centralized technology project initiation and tracking process for managing technology projects across City departments.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Policies and Procedures</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	There is currently no City-wide mechanism to track technology related projects or to view all active projects involving technology across the various City departments. Without such a mechanism, the challenge of appropriately planning for and allocating resources, as well as planning project priorities, becomes a significant issue. In addition, without centralized visibility of technology projects, managing the implementation of technology in a structured, efficient and effective manner will continue to be very difficult.		
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Implement a Project Office and Customer Care function in the IT organization to support project tracking and management, as defined in Focus Area 4.2, along with overall customer care and customer relationship management.		Short term	Technology Support Services Manager
2. Create a centralized project initiation process, supported by the systems development methodology as defined in Focus Area 3.1.		Short term	Technology Support Services Manager
3. Evaluate and implement a project tracking tool to support the project management process and methodology.		Short term	Technology Support Services Manager
4. Educate appropriate IT staff on project initiation, tracking, and management (methodology) processes.		Short term	Technology Support Services Manager
5. Educate project governance teams, as defined in Focus Area 3.3, on the process that will be utilized for initiating and tracking projects.		Intermediate term	Technology Support Services Manager



<b>3.3 PROJECT GOVERNANCE AND INFORMATION TECHNOLOGY POLICY</b>			
<b>Statement of Direction:</b> Use a customer-driven structure to evaluate project requests, set priorities, and establish technology policies and standards.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Policies and Procedures</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	The City utilizes the Information Technology Leadership Team (ITLT) to guide technology investment decisions within the City. Currently, the membership of this committee is primarily comprised of individuals that do not have ultimate decision making authority for a given department. The other existing governance teams (New World Systems Advisory Team, GIS Advisory Team, Web Steering Team) represent informal groups focused on guiding technology in the respective areas, with decision making responsibilities sometimes unclear.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Charter the ITLT, Public Safety Advisory Team, Web Steering Team, GIS Advisory Team, New World Systems Advisory Team, and the Community Development Advisory Team with the missions and responsibilities as defined in section 6.4 of this plan.		Short term	City Manager
2. Affirm the responsibility of evaluation and prioritization of new technology projects as the ITLT's, in accordance with the criteria outlined in the City's Information Technology Project Governance policy.		Short term	City Manager
3. Appoint senior managers from each of the major operating departments across the City to be members of the ITLT.		Short term	City Manager



3.4 VERSION CONTROL AND CONFIGURATION MANAGEMENT			
<b>Statement of Direction:</b> Implement process to support version control and configuration management for key applications and their respective operational environments.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Policies and Procedures</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	The City does not fully utilize version control within the departments currently responsible for development and maintenance of software supporting key governmental systems. Without version control and a configuration management process in place, there is risk that a system or software change could have an adverse impact and the results may not be reversible.		
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Define requirements for a version control and configuration management tool for both in-house developed and commercial-off-the-shelf systems.		Intermediate term	Application Services Manager
2. Develop a configuration management process to manage application configurations and provide for overall release management for applications. This process will be linked to the overall customer care process as identified in Focus Area 4.2.		Intermediate term	Application Services Manager
3. Obtain and implement desired tool and associated process.		Intermediate term	Application Services Manager
4. Provide training to IT staff on the use of both the tool and the process.		Intermediate term	Application Services Manager



### 3.5 TECHNOLOGY REFERENCE ARCHITECTURE

**Statement of Direction:** Develop a formal technology reference architecture document that services as the basis, blueprint, and standards for the implementation of technology within the City.

<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Policies and Procedures</i>
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<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>
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<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	The City current has some number of defined standards as well as basic definitions for technology architecture. The City has an opportunity to fully develop a reference architecture that will be utilized by the ITLT and other strategic governance teams as a blueprint for evaluating technology project as well as providing a technical reference for the planning, implementation and management of technology within the City.
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STRATEGIES AND ACTIONS:	TIMEFRAME	ACCOUNTABILITY
1. Building on work performed during the strategic planning process and on work to be completed from Focus Areas 5, 6, and 7, fully define the technology infrastructure services that will be utilized to support the City's technology environment.	Long term	Network Services Manager
2. Fully define the standards that will be utilized to support the City's technology environment, creating a reference architecture.	Long term	All IT Division Managers



#### **FOCUS AREA 4: TECHNOLOGY ORGANIZATION**

This focus area addresses strategies related to the organizational structure utilized to plan, implement, and manage technology within the City of Lynchburg. An effectively structured technology organization will play a key role in the success of information technology within the City.

**Focus Area Leader:** Information Technology – Mike Goetz

4.1 CENTRALIZED TECHNOLOGY SUPPORT

**Statement of Direction:** Eliminate autonomous groups responsible for planning, implementing, and maintaining technology within the City, and centralize these functions into a City-wide Information Technology organization.

<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Organization</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	The City currently has multiple departments responsible for full life-cycle technology implementation including Information Technology, Police, Emergency Communications, Commonwealth’s Attorney, and Schools. Each group has complete autonomy in their respective planning, implementation and management of technology. This poses several issues including potential inefficiencies in the use of technology, risk related to information security and continuity of operations, and risk in terms of support being provided by a single individual.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Establish a centralized public safety application services division, reporting to Information Technology department, responsible for the design, implementation, and support of applications to support City public safety needs (Police, Fire, Lyncom, Commonwealth’s Attorney). Create by merging Police, Fire, Commonwealth’s Attorney applications support staff resources. See Focus Area 4.6		Short term	City Manager
2. Incorporate existing staff performing network services in the Police department into the IT Network Services division. Expand division’s responsibilities to include Police, Fire, Lyncom, and Commonwealth’s Attorney support.		Short term	City Manager



4.2 TECHNOLOGY SUPPORT SERVICES DIVISION		
<b>Statement of Direction:</b> Implement a multi-tier customer support process and organizational structure, incorporating centralized technology project initiation, tracking, and customer care.		
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Organization</i>	
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>	
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Currently, the City utilizes a support model where specific individuals are assigned to support specific departments or areas within the City. There currently are not enough support personnel to staff this type of model covering all departments within the City. As Information Technology supports a greater number of departments, the current structure will prevent scaling to meet these needs.	
STRATEGIES AND ACTIONS:	TIMEFRAME	ACCOUNTABILITY
1. Restructure three existing positions in IT to create a managerial position and two customer support representative positions to perform the customer support and help desk functions, creating the Technology Support Services division. In addition, incorporate a Project Office function for project initiation, tracking, and systems development methodology support.	Short term	Director Information Technology
2. Institute a help desk process to serve as the first line of technical support to all departments for information technology help requests.	Short term	Technology Support Services Manager
3. Implement centralized project initiation and tracking process as defined in Focus Area 3.2.	Short term	Technology Support Services Manager
4. Educate departments on the process that will be utilized for initiating and tracking projects.	Intermediate term	Technology Support Services Manager



4.3 DATABASE DESIGN AND ADMINISTRATION			
<b>Statement of Direction:</b> Provide for the design, engineering, implementation, and support of all database management systems utilized by the City.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Organization</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Information Technology currently has a database administrator that is primarily focused on Oracle database administration. However, the City has other instances of database management systems, such as Microsoft's SQL Server, with no dedicated database administration support. In addition, no one has the assigned responsibility for design of database integration.		
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Identify position and resource requirements for database administration, based on architecture developed in Focus Area 6.		Intermediate term	Application Services Manager
2. Identify staff resources to fill the defined role, including current skills and required training and development.		Intermediate term	Application Services Manager

4.4 TECHNOLOGY SERVICES EDUCATION			
<b>Statement of Direction:</b> Develop an education curriculum to provide both new and current employees with a mechanism for learning how to utilize and take advantage of technology currently available within the City.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Organization</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	There is an opportunity to improve the mechanisms for training new employees or existing employees in terms of current technology services available and how to utilize these services.		
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Work with HR and other key departments to evaluate needs and requirements related to technology education, and evaluate responsibilities between IT, HR and departments for design, implementation, and delivery of training.		Short term	Technology Support Services Manager
2. Develop an education portfolio outline for technology services such as e-mail, Internet access, file and print services, as		Intermediate term	Technology Support Services Manager





well as specific application training.		
3. Develop resource estimates based on the portfolio outline.	Intermediate term	Technology Support Services Manager
4. Submit training plan for approval and funding to support development of identified process and curriculum .	Intermediate term	Technology Support Services Manager
5. Develop recurring schedule for delivery of defined curriculum.	Long term	Technology Support Services Manager

<b>4.5 GIS DIVISION</b>		
<b>Statement of Direction:</b> Establish a division within the Information Technology Department to lead the City's strategic GIS efforts.		
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Organization</i>	
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>	
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Currently, GIS is a subset of the Engineering Department within the City and as a result has a specific focus around utilization of GIS for use in Engineering and Public Works. Initiatives to integrate GIS to other systems in the City are lacking. The City has an opportunity to establish a GIS organization with a broader focus that can provide GIS as an enterprise service within the City.	
<b>STRATEGIES AND ACTIONS:</b>	<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Realign the GIS division to be in the Information Technology Department.	Short term	City Manager
2. Evaluate existing GIS resources and determine need for changes to support GIS strategic plan to be developed in Focus Area 2.3.	Intermediate term	Director Information Technology



<b>4.6 PUBLIC SAFETY APPLICATION SERVICES DIVISION</b>			
<b>Statement of Direction:</b> Establish a division within the Information Technology Department to lead and support applications utilized for public safety functions within the City.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Technology Organization</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Currently, the planning, implementation, and management of technology utilized for public safety is separated between Fire, Police, Commonwealth's Attorney, and Lyncom. This limits the City's ability to provide an efficient cooperating strategy for implementation and support of technology for public safety functions. The City has already consolidated personnel supporting the Fire Department into the IT organization. An opportunity exists to do the same with the aforementioned departments, creating an effective organization to administer technology for public safety across the City.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Establish a Public Safety Application Services division within the Information Technology Department.		Short term	City Manager
2. Centralize personnel providing application support for the Police, Fire, and Commonwealth's Attorney departments into the Public Safety Application Services division.		Short term	City Manager
3. Establish division's application services responsibilities to include Police, Fire, Lyncom, and Commonwealth's Attorney.		Short term	City Manager



## **FOCUS AREA 5: NETWORK ARCHITECTURE**

This focus area addresses strategies related to the technology infrastructure utilized to support the key governmental systems and processes within the City. This focus area relates to network infrastructure and services, physical server infrastructure, and other supporting technologies such as network management and proactive monitoring services.

**Focus Area Leader:** Information Technology – Terry Hutchens

<b>5.1 ENTERPRISE NETWORK SERVICES</b>			
<b>Statement of Direction:</b> Develop a network architecture which supports integrated, enterprise use of network services.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Network Architecture</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Several network services are provided and managed in an autonomous fashion by independent departments. This results in difficulty in providing reliable network services, as well as inefficiencies by deploying redundant or overlapping network services.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Identify comprehensive requirements for wireless network connectivity and develop a plan and architecture for the deployment of a secure, enterprise wireless network infrastructure.		Short term	Network Services Manager
2. Develop a comprehensive architecture and plan for the deployment of a common directory services platform to support authentication and authorization across all City departments.		Short term	Network Services Manager
3. Evaluate current use of network-based printing and develop a strategy for utilizing network printing resources more effectively.		Intermediate term	Network Services Manager



5.2 NETWORK SERVICES AVAILABILITY			
<b>Statement of Direction:</b> Establish a network services environment which meets the business needs for availability.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Network Architecture</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	<p>Many opportunities exist to increase the availability of certain network services. Information Technology utilizes software to monitor availability of key network and server infrastructure. Other departments, such as Police and Emergency Communications, do not utilize any method of monitoring the health and availability of systems. Processing equipment is located in five sites, with little capability for sharing resources to ensure availability of services in the event of a major outage or disaster. Currently, the state of disaster recovery plans is either inadequate or non-existent.</p>		
STRATEGIES AND ACTIONS:	TIMEFRAME	ACCOUNTABILITY	
1. Consolidate computer operations sites to fewer locations, possibly two, to increase operational efficiency, ensure adequate levels of power availability, fire protection and other general environmental protections.	Long term	Network Services Manager	
2. Renovate Carter Glass building to meet data center consolidation requirements.	Intermediate term	Technology Support Services Manager	
3. Develop a comprehensive strategy for disaster recovery of data center services.	Intermediate term	Technology Support Services Manager	
4. Centralize the management of network devices, ensuring the ability to view and troubleshoot the entire network from a central point.	Long term	Network Services Manager	
5. Implement standard time appliance to provide reliable, consistent time to all devices in the network.	Short term	Network Services Manager	
6. Implement enterprise network monitoring service that can provide proactive monitoring of all key systems.	Intermediate term	Network Services Manager	



## **FOCUS AREA 6: APPLICATION AND DATA ARCHITECTURE**

This focus area addresses strategies related to the architecture of the key applications and information utilized by the City. The scope of this focus area includes the relationships between applications, the technologies they utilize, the methods utilized to develop applications, and the methods utilized to integrate one system to another. The scope of this focus area also addresses the information utilized by these systems in terms of overall structure, storage, and retrieval.

**Focus Area Leader:** Information Technology – Gary Cowden

<b>6.1 ENTERPRISE DATABASE MANAGEMENT SYSTEMS</b>			
<b>Statement of Direction:</b> Identify a strategic, standard set of database management systems to support multiple applications in a centralized, highly available manner.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Application and Data Architecture</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Multiple instances of the Microsoft SQL Server data base management system exist across the City, managed independently by multiple departments. Opportunities exist to reduce the number of instances to save on licensing costs.		
<b>STRATEGIES AND ACTIONS:</b>		<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Define requirements for data storage technology needed to support the current application portfolio across the City, as well as envisioned future applications.		Intermediate term	Application Services Manager
2. Define the strategic data services architecture and the standard data base management systems to support highly available, redundant operational requirements, encompassing all platforms including AS/400 and Windows/Intel platforms.		Intermediate term	Application Services Manager
3. Identify where multiple or non-standard instances of each type of database management system exist, and consolidate into the centralized platform where possible.		Long term	Application Services Manager



6.2 ENTERPRISE DECISION SUPPORT PLATFORM			
<b>Statement of Direction:</b> Establish a separate, read-only decision support platform and enterprise reporting service to support analytical and ad hoc reporting, while also providing a data infrastructure supporting the City's E-Government plan.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>		<i>Application and Data Architecture</i>	
<b>RELATED CITY FOCUS AREA:</b>		<i>Workforce Development and Process Improvement</i>	
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>		The City currently utilizes the transactional systems to support departmental reporting. This has the potential to create bottlenecks in the future for users attempting to enter or retrieve information. There are also many instances of standalone implementations of report writers, such as Crystal Reports, not taking advantage of enterprise reporting options.	
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Develop an architecture and logical design for a decision support platform, consistent with the database management system standards developed in Focus Area 6.1.		Intermediate term	Application Services Manager
2. Based on the work performed in Focus Area 6.3 and requirements identified in Focus Area 2.4, identify sources of information that will populate the decision support environment. Identify the tools that will be utilized to populate and update the decision support platform.		Long term	Application Services Manager
3. Implement the physical decision support platform.		Long term	Application Services Manager
4. Evaluate and select an enterprise reporting tool.		Intermediate term	Application Services Manager
5. Implement the enterprise reporting solution to access the decision support environment.		Long term	Application Services Manager
6. Develop training and education curriculum to educate key departments on the use of the enterprise reporting service.		Long term	Application Services Manager



<b>6.3 ENTERPRISE DATA MODEL</b>		
<b>Statement of Direction:</b> Develop an enterprise data model to provide the City with a comprehensive view of data elements in key systems, supporting integrated information access, decision support, and E-Government.		
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Application and Data Architecture</i>	
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>	
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	Information related to various key business processes and systems is in stored in a heterogeneous platform environment in many different formats. No comprehensive catalog or dictionary exists to describe where key data resides. As a result, it is very difficult to integrate information between applications across platforms.	
<b>STRATEGIES AND ACTIONS:</b>	<b>TIMEFRAME</b>	<b>ACCOUNTABILITY</b>
1. Utilize the high-level business process models developed in Focus Areas 1.1 and 1.2 to create a high-level data entity relationship model.	Long term	Application Services Manager
2. Collect and document the meta data that effectively describes the data attributes and their respective relationships.	Long term	Application Services Manager
3. Utilize the enterprise data model as a reference in the systems development methodology.	Long term	Application Services Manager



6.4 SYSTEMS INTEGRATION ARCHITECTURE			
<b>Statement of Direction:</b> Develop a detailed technical architecture to support both batch and real-time interfaces between key business systems and platforms.			
<b>STRATEGIC TECHNOLOGY FOCUS AREA:</b>	<i>Application and Data Architecture</i>		
<b>RELATED CITY FOCUS AREA:</b>	<i>Workforce Development and Process Improvement</i>		
<b>PROBLEM/OPPORTUNITY STATEMENT:</b>	There is currently not a well-defined architecture in place to support batch or real-time interfaces between the City's key business systems. This results in the creation of multiple interfaces to support various project needs without a comprehensive, consistent strategy. As the City progresses with initiatives such as GIS and E-Government, it will be important to have this strategy in place to support the needs of these projects in a timely manner.		
STRATEGIES AND ACTIONS:		TIMEFRAME	ACCOUNTABILITY
1. Evaluate each key application and identify interface and integration capabilities of each application.		Intermediate term	Application Services Manager
2. Develop an interface and integration architecture, including the methods supported for interfacing and integration.		Intermediate term	Application Services Manager
3. Identify middleware solutions that meet the requirements as defined and that aligns with the City's overall technology architecture.		Intermediate term	Application Services Manager
4. Evaluate candidate middleware solutions and perform proof of concept to establish viability of identified solution.		Intermediate term	Application Services Manager
5. Select and implement core integration solution.		Long term	Application Services Manager





**FOCUS AREA 7: SECURITY ARCHITECTURE**

*Pages 49-51 are intentionally omitted from publication.*



*Pages 49-51 are intentionally omitted from publication.*



*Pages 49-51 are intentionally omitted from publication.*



## **8 TRANSITION PLAN SUMMARY**

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This section of the strategic plan is intended to capture the key milestones from the defined focus areas. This section is intended to group the key milestones and strategies based on functional area versus by focus area as defined in the previous section of the plan. Information contained in this section of the plan will be utilized to develop a comprehensive project plan for addressing the strategies and actions as defined.

### **8.1 GENERAL GOVERNMENTAL APPLICATION TECHNOLOGY**

- Milestone: Establish Role Reporting to City Manager's Office to Lead the City's Business Process Refinement Initiative and Define a Plan for Process Review within the City (Focus Area 1)
- Milestone: Map Technology Solutions to Refined Business Process Model to Provide a Comprehensive Integrated Systems Strategy (Focus Area 2)
- Milestone: Initiate Individual Systems Implementation Projects to Realize the Comprehensive Integrated Systems Strategy (Focus Area 2)

### **8.2 PUBLIC SAFETY TECHNOLOGY**

- Milestone: Establish Public Safety Application Services Division within Information Technology Department (Focus Area 4)
- Milestone: Map Public Safety Technology Solutions to Public Safety Business Process Model to Provide a Comprehensive Integrated Systems Strategy (Focus Area 2)
- Milestone: Initiate Individual Systems Implementation Projects to Realize the Comprehensive Integrated Systems Strategy (Focus Area 2)

### **8.3 E-GOVERNMENT TECHNOLOGY**

- Milestone: Re-charter the Web Steering with a Defined Set of Goals and Responsibilities (Focus Area 2)
- Milestone: Develop a Detailed, Iterative Plan for Implementing Defined E-Government Services (Focus Area 2)
- Milestone: Develop Comprehensive Requirements for E-Government Services Based on Defined Departmental Needs (Focus Area 2)
- Milestone: Develop a High-Level Technical Architecture to Support E-Government Services (Focus Area 2)



#### **8.4 GIS TECHNOLOGY**

- Milestone: Establish GIS Application Services Division within Information Technology Department to be Led by GIS Manager (Focus Area 4)
- Milestone: Work with Departments to Define a Set of Comprehensive Requirements for GIS and Develop Strategic GIS Plan (Focus Area 2)
- Milestone: Identify Strategic Relational Database Management Platforms (Focus Area 6)
- Milestone: Establish Architecture to Support Enterprise Decision Support Platform (Focus Area 6)
- Milestone: Develop Enterprise Data Model (Focus Area 6)
- Milestone: Develop Comprehensive Systems Integration Architecture to Support Real-Time Interfaces for Key Applications and Systems (Focus Area 6)

#### **8.5 INFORMATION TECHNOLOGY PROCESS**

- Milestone: Implement Technology Support Services Division within Information Technology Department (Focus Area 3)
- Milestone: Develop Formal Technology Reference Architecture to Support Technology Planning and Implementation (Focus Area 3)
- Milestone: Implement a Systems Development Process to be Utilized for Deploying Technology Across the City (Focus Area 3)
- Milestone: Implement Process to Support Centralized, Customer-Driven Project Evaluation, Prioritization, and Initiation (Focus Area 3)
- Milestone: Implement Process to Support Version Control and Configuration Management for Key Applications and Operational Environments (Focus Area 3)
- Milestone: Implement Technology Education Curriculum to Providing Education on Use of Technology Services (Focus Area 4)

#### **8.6 INFORMATION TECHNOLOGY ORGANIZATION**

- Milestone: Establish Public Safety Application Services Division within Department Information Technology (Focus Area 4)
- Milestone: Establish GIS Division within Department Information Technology (Focus Area 4)
- Milestone: Centralize Departmental Network Support Staff into Network Services Division in Information Technology Department (Focus Area 4)



Milestone: Establish Technology Support Services Division within Information Technology Department to Support Comprehensive Customer Relationship Management, Centralized Technology Project Tracking, and Technology Process (Focus Area 4)

Milestone: Establish Database Administrator Role with Information Technology Department (Focus Area 4)

## **8.7 INFORMATION SECURITY**

*This section is intentionally omitted from publication*

## **8.8 INFORMATION TECHNOLOGY INFRASTRUCTURE**

Milestone: Develop Comprehensive Plan for Implementation of Wireless Technology (Focus Area 5)

Milestone: Work with Key Departments to Develop a Comprehensive Plan for Implementation of a Consolidated Network and Directory Services Platform (Focus Area 5)

Milestone: Develop a Plan for Migration to Network-Based Printing (Focus Area 5)

Milestone: Renovate Site for Co-location of Technology Data Center Infrastructure (Focus Area 5)

Milestone: Consolidate Computer Operations Sites and Design for Highly Available, Redundant Operations (Focus Area 5)

Milestone: Develop Comprehensive Strategy for Disaster Recovery (Focus Area 5)

Milestone: Implement Centralized Network Monitoring Services to Monitor Key Systems and Resources (Focus Area 5)

Milestone: Implement Centralized Network Time Provider (Focus Area 5)